

1849.	R.A.			N.P.D.			1849.	R.A.			N.P.D.		
	h	m	s	°	'	"		h	m	s	°	'	"
June 23	22	41	23.55	105	39	28.3	July 3	22	44	24.40	105	57	59.7
24		41	48.20		40	37.2	4		44	34.18	106	0	43.1
25		42	11.43		41	55.4	5		44	42.39		3	35.9
26		42	33.22		43	22.9	6		44	49.01		6	38.3
27		42	53.57		44	59.7	7		44	54.03		9	50.2
28		43	12.45		46	46.0	8		44	57.43		13	11.5
29		43	29.86		48	41.8	9		44	59.19		16	42.5
30		43	45.77		50	47.0	10		44	59.31		20	22.9
July 1		44	0.17		53	1.8	11		44	57.77		24	12.7
2	22	44	13.06	105	55	26.0	12	22	44	54.56	106	28	11.8

Horizontal Parallax.

June 2	4.01	June 18	4.45	July 4	4.94
6	4.11	22	4.57	8	5.07
10	4.22	26	4.69	12	5.20
14	4.33	30	4.81		

"The *continuation* is from the same elements as the first portion. I have since computed fresh elements, which agree better with the observations; these are subjoined.

Epoch, May 0.0, Greenwich M.T.

Mean Anomaly	.....	144	9	44.3	
π	.....	71	8	46.8	} Mean Eq. May 0.0.
Ω	.....	68	27	46.8	
i	.....	5	35	47.1	
ϕ	.....	7	4	0.5	
Log a	.....	0.3776655			
μ	.....	962	7384		

The corrections to the ephemeris, according to these elements, are

	R.A.	N.P.D.
1849. May 1.0	−15.12	+1 26.6
July 20.0	−30.85	+3 18.2

HEBE.

LIVERPOOL.

Equatoreal.

(Mr. Hartnup.)

1849.	Greenwich M.T.			R.A.			N.P.D.			Comp ^d —Obs ^d .		Star. B.A.C.
	h	m	s	h	m	s	°	'	"	R.A.	N.P.D.	
April 26	9	13	47.3	6	53	50.63	70	29	53.2	+6.27	−15.8	2233—2330
28	8	57	42.1	6	56	54.93	70	25	46.6	+6.56	−11.7	2271—2350

"Corrected for refraction and parallax, and compared with M. Luther's ephemeris, published in the *Monthly Notices*, Vol. ix. No. 6."

Observations of the Elongations of the Satellites of Saturn, made during the Opposition of 1848 with the 20-foot Equatoreal.
By Mr. Lassell.

"The powers generally used were 219, 297, and 366. The elongations were measured in arc of right ascension, and not in the

direction of the major axis of *Saturn's* ring. This was done for greater accuracy as well as convenience. In the earlier observations, most of the distances are deduced from differences of transits of *Saturn's* limb and the satellite, reduced to *Saturn's* centre by applying the semi-diameter from the *Nautical Almanac*; but the later measures were chiefly micrometrical—a method I greatly prefer and now constantly employ,—except in the great elongations of *Iapetus*, which are too distant for the micrometer. Owing to the present position of *Saturn's* ring, the nearer satellites did not wander sensibly from the plane of the ring; when the more distant ones were obviously out of that plane, I took differences of declination of the satellites and *Saturn's* limb, reduced to his centre.

“The sign + affixed to any measured elongation indicates that the satellite is ascertained, or believed to be receding from the planet; and the sign —, that it is approaching.

Mimas.

1848. d	
Sep. 16.42	Estimated to be at its greatest eastern elongation from <i>Saturn's</i> limb, about 1 diameter of the planet.
19.46	Estimated to be 10" distant from the preceding limb, moving away from the planet.
21.54	Estimated to be 30° short of its greatest elongation westward.

Enceladus.

1848. d	"		
Sep. 16.45	36	E.	estimated
18.37	34	W.	"
Oct. 17.34	28	+ W.	"
25.46	36	W.	"
29.43	28	W.	"
Nov. 14.38	40	E.	"

Tethys.

Oct. 22.45	28.7	+ E.	4 obs.
25.46	43.9	+ W.	3 "
29.43	38	W.	estim.
Nov. 4.35	20	— W.	"
14.38	49	E.	3 obs.

Hyperion.

Sep. 21.55	234	" E.
22.41	207	E.
Oct. 20.35	178	W.
22.44	203	W.
Nov. 14.36	133	W.
24.45	202.8	E.

Dione.

1848. d	"		
Oct. 5.46	48	E.	
16.50	41	E.	3 obs.
17.34	26	E.	3 "
22.45	55	— E.	4 "
25.46	39.6	— E.	4 "
29.43	44.5	— W.	3 "
Nov. 9.28	55.4	— W.	4 "
14.38	50	+ W.	2 "
24.45	44.7	— E.	2 "

Rhea.

Oct.	5.46	66"	W.	
	16.50	80	E.	
	17.34	5	—E.	
	18.35	74	+W.	5 obs.
	20.34	64	+E.	4 "
	21.45	56	—E.	5 "
	22.45	49	+W.	6 "
	29.43	66.9	+E.	3 "
Nov.	4.35	26	—E.	estim.
	11.26	15	+E.	"
	14.38	69	+W.	6 obs.
	21.35	77	+E.	3 "
	24.45	37.2	—W.	2 "

Titan.

1848.	d	"			
Sep.	21.54	193	E.		
Oct.	5.46	183	E.	2 obs.	
	16.50	127	—W.	3	"
	17.34	76	—W.	3	"
	18.35	occulted by Saturn.			
	20.34	134	E.	3	"
	21.45	181	E.	4	"
	22.45	197	E.	2	"
	29.43	166.5	+W.	3	"
Nov.	4.35	75.5	+E.	3	"
	9.28	148	—E.	4	"
	11.26	91.6	—E.	3	"
	14.38	163	+W.	4	"
	21.35	134	+E.	4	"
	24.45	173.4	—E.	2	"
	30.36	159.8	+W.	2	"
Dec.	1.43	171.7	—W.	1	"
				14.4 S.	2 obs.
				13.5 S.	2 "
				12.6 N.	1 "
				6.1 S.	1 "
				11.9 N.	2 "

Iapetus.

Sep.	21.56	439.5	E.		
	22.41	482	E.		
Oct.	5.46	513	E.	110 "	N. of Saturn's centre.
	16.50	127	E.	89	N. 2 obs.
	17.34	86	E.		
	18.35	38	E.	62	N. 3 "
	20.34	43	W.		
	21.45	88	W.	52	N.
	22.45	134	W.	45	N.
	25.46	250	W.	40	N.
	29.43	388.3	W.	5	N.
Nov.	4.49	524	W.	30	S.
	9.28	538.6	W.	61	S. 2 "
	11.26	534	W.	64.3	S. 3 "
	14.38	475	W.	76	S. 2 "
	21.35	266	W.	73.8	S. 3 "
	24.45	146.6	W.	68.8	S. 2 "
	30.40	104.2	E.	44	S. 1 " ?
Dec.	1.43	149	E.		

Note on the Mass of Uranus. By Mr. Adams.

“The mass of *Uranus* is a very important element in the determination of the orbit of *Neptune*. Two values of this mass have been given, differing widely from each other. Bouvard, from the action of *Uranus* on *Saturn*, found the mass to be $\frac{1}{17918}$, that of the sun being = 1; while more recently, from observations of the satellites, Lamont has obtained the value $\frac{1}{24605}$. In order to throw light on this subject, Mr. Lassell was kind enough to make for me the observations of the satellites of *Uranus*, which are given in the *Monthly Notice* for March last.